



# HYGIENETECH

Hygiene Technologies International, Inc.

3625 Del Amo Boulevard, Suite 180  
Torrance, California 90503-1643  
(310) 370-8370  
(310) 370-7026 FAX  
www.hygienetech.com

May 4, 2009

State of California  
Board of Equalization  
450 N Street  
Sacramento, California 94279

Document No. 20903001.1

Attention: David Gau

Regarding: 21<sup>ST</sup> Floor Odor Investigation

Dear Mr. Gau:

On February 26, 2009, Hygiene Technologies International, Inc. (HygieneTech) conducted interviews with a number of State of California Board of Equalization (BOE) employees from the 21<sup>st</sup> Floor regarding the persistent fungal growth-like odors (hereinafter simply referred to as *odors*) that have been frequently cited factors of concern that are believed to be related to the indoor air quality in the building. Generally, the interviewees have indicated that the odors were most noticeable at the elevator lobby locations and reportedly those odors have been obvious throughout the past years, with no appreciable seasonal differences. Based on the interview findings, along with past HygieneTech assessment surveys within the structure, historical building information, and LaCroix Davis, LLC (LCD) building investigations, HygieneTech offers the following conclusions regarding most likely potential sources of these odors (in rank order).

- HygieneTech is aware that, on multiple floor levels, including the elevations immediately above Floor 21, fungal growth has occurred in interstitial wall spaces surrounding the elevator shafts and other areas on the floor where previous water intrusion events had occurred, whether the events were known or yet to be discovered. LCD conducted destructive testing on Floors 11, 22, 23, and 24 and they have revealed and confirmed surface fungal growth at varying locations within these interstitial wall spaces, particularly around the elevator shafts and adjacent to the restrooms. Although such investigation has not taken place on the 21<sup>st</sup> Floor or the remaining floors, HygieneTech believes with reason that such surface fungal growth likely exists within similar areas on other floor levels, and that that growth contributes to the overall odor issues in the building.
- Visible suspect fungal growth was observed on varying elevator shaft walls during the joint LCD/HygieneTech inspections; and therefore HygieneTech believes that a high likelihood exists that that fungal growth results in characteristic odors; particularly at the upper floors, where the piston action of the elevator cars affect the head space in the shafts.
- Visible evidence of water intrusion and/or suspect fungal growth has been observed in multiple restrooms throughout the structure at and near the sink counter area, including the 21<sup>st</sup> Floor.



LCD also indicated that several restrooms also showed evidence of visible surface fungal growth above the hard ceiling. Such growth can contribute to characteristic odors.

- Visible evidence of water intrusion and/or suspect fungal growth had been observed in multiple janitor closets/hopper rooms throughout the structure on varying floors. Such growth can contribute to characteristic odors.
- Historic water leaks have been known to have occurred at varying locations throughout the structure. Visible water intrusion had been reported, particularly in the southeastern quadrant of the 21<sup>st</sup> Floor, at windowsills, wall, and carpeting along the exterior wall system.
- The majority of the Break Rooms had exhibited evidence of on-going water intrusion. While the majority have been remediated and restored, including those on the 21<sup>st</sup> Floor, a small number of break rooms are still awaiting remediation.

Note also that while this odor investigation has been focused on the 21<sup>st</sup> Floor, fungal growth reservoirs that exist on other floors may contribute to the overall odor issue. Therefore, HygieneTech is providing general recommendations for the 21<sup>st</sup> and other floors above and below. These recommendations are offered based strictly on the assessment information and analytical data that were available to HygieneTech at the time this report was prepared:

- 1) Additional investigation, which should include destructive testing and/or wall cavity sampling, should be performed along the exterior wall system in the southeastern quadrant of the 21<sup>st</sup> Floor that were impacted by water intrusion resulting from the faulty windows. The same type of investigation should extend to other floors located directly below or elsewhere that were known to have been impacted by similar water intrusion events.
- 2) All water and/or fungal growth impacted areas should be remediated using the appropriate methods available and accepted as industry standards. These areas should include, but are not limited to, the elevator shafts, interstitial wall space surrounding the elevator shafts and other areas, rest rooms, janitor closets/hopper rooms, the remaining break rooms, and/or the exterior wall system.
- 3) All such work should be performed under conditions that are similar to fungal growth remediation protocols that DGS and their consultant have developed for past and on-going remediation work in this building.
- 4) An appropriately qualified and experienced contractor should perform all abatement work using engineering controls designed to reduce the potential for dispersion of spores and other airborne particulates.
- 5) All industrial hygiene work should be performed by or under the direction of an individual who is certified in comprehensive practice by the American Board of Industrial Hygiene (ABIH).

Please be advised that while fungal growth reservoirs remain within the structure and they undoubtedly contribute to the continuing odor issues, past and on-going air sampling by HygieneTech within the elevator lobbies, office/cubicle areas, restrooms, and other areas have indicated fungal spore concentrations and distribution that were consistent with those found outdoors, and the overall data within the sampled areas were well below the overall data recorded outdoors. Collectively, those data recorded in

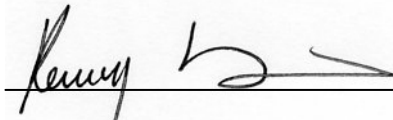


non-construction areas were considered unremarkable and are not believed to pose a health risk beyond that posed by the outdoor environment where exposures to airborne fungi are expected. Also be advised that the data collected to date only represent limited fungal exposure potentials that existed at the times of those surveys and at the precise sample locations indicated in those reports, the latter of which were selected based on the available background information provided. Note that fungal exposure potentials may change due to changes in environmental conditions (such as those caused by water intrusion), use of mechanical systems, or other factors. Also note that additional fungal growth may exist at one or more locations in the structure that were not specifically assessed during those surveys by HygieneTech or other consultants.

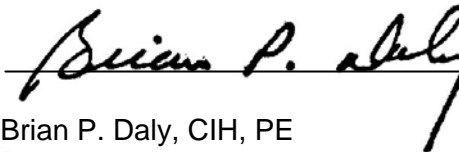
If you have any comments or questions regarding the information contained in this correspondence, please feel free to contact our offices directly at (310) 370-8370.

Sincerely,

**HYGIENE TECHNOLOGIES INTERNATIONAL, INC.**



Kenny K. Hsi, CIH  
Technical Director



Brian P. Daly, CIH, PE  
President